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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,902	04/19/2001	Kenichi Arimura	50212-211	7482

7590 08/01/2003

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/01/2003

69

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,902

Applicant(s)

ARIMURA ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2 Claims 1-3, 7 and 9-12 are rejected under 35 U.S.C. 103(a) as unpatentable over Goodman (2002/0043337) in view of Mahawili (US 6007635).

Goodman discloses a semiconductor production apparatus having a susceptor having recesses of an elongated form in the lower surface of the susceptor (Figs. 1, 2a, 2b and 8 and paragraphs 125-144). The susceptor is supported by a main shaft having radially extending arms, wherein the arms have protrusions as claimed that engage the recesses. The recesses have portions, both at their tops (paragraph 127) and their bottoms, which extend parallel to the susceptor surfaces. The arrangement allows movement of the susceptor in a radial direction relative to the protrusions.

Goodman does not state that the recesses have a closed end on an outer peripheral side thereof.

Mahawili discloses a susceptor, which has recesses underneath of an elongated shape having closed end on an outer peripheral side (Fig 1 and 2 42, 44, 46 and 48) to enable unrestricted thermal expansion (Col 5 lines 38-55).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use recesses of closed end because that makes alignment of the susceptor easier. Regarding the phrase "protrusions being configured to engage said closed end" it may be noted that the protrusions are generally designed so that there may be some gap between the protrusion and the closed end to take care of manufacturing tolerances. Therefore Mahawili's disclosure would be equivalent and obvious.

3 Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (2002/0043337) in view of Mahawili (US 6007635) as applied to claim 1-4, 7 and 9-12 and further in view of Nulman (5,098,198).

Nulman discloses a low mass susceptor similar to that of Goodman, and Nulman (col. 1, lines 55-59) teaches that a silicon carbide coated graphite susceptor can be used as an alternative to a silicon carbide susceptor.

It would have been obvious to one skilled in the art to substitute a silicon carbide coated graphite susceptor for the silicon carbide susceptor used in Goodman's apparatus, because Nulman teaches that a silicon carbide coated graphite susceptor can be used successfully in a semiconductor processing apparatus, graphite coated susceptors being very common for economy and thermal properties.

4 Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (2002/0043337) in view of Mahawili (US 6007635) as applied to claim 1-4, 7 and 9-12 and further in view of deBoer (5,427,620),

deBoer discloses a semiconductor processing apparatus similar to that of Goodman, and teaches (col. 7, lines 8-15) the use of a support shaft made of fused quartz, which is silica glass.

It would have been obvious to one skilled in the art to use a fused quartz support shaft in Goodman's apparatus, because deBoer teaches that a transparent quartz support shaft desirably transmits radiant heat.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK
July 28, 2003

primary Examiner
AV 1763
P. Hanson-John